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ABSTRACT

A 2-week instructional unit on weather and climate, designed for seventh grade limited-English-proficient students, is presented. Each lesson plan uses a variety of teaching techniques and provides extension activities that can be adapted to students with higher proficiency ratings. Most of the units are intended for completion in 1 or 2 days, but some may be shortened or lengthened according to student and teacher interests. A variety of science experiments that can be implemented during the lesson are included. Student worksheets and handouts are also included. Contains 10 weather references. (MSE)

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ED 383 218

INTEGRATING CONTENT

IN THE ESL CLASSROOM

A THEMATIC APPROACH

CLIMATE AND WEATHER IN GRADE 7 SCIENCE

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JUNE 24, 1994

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English As A Second Language

Thematic Unit

Climate and Weather

This thematic unit is designed to meet the curriculum needs of seventh grade science. It is directed toward the P-0+ to P-1+ limited English learners. Ideally, a class size of 20 students would fit nicely into this unit as many activities are directed in cooperative learning groups. A variety of teaching methods and styles are incorporated into each lesson plan, with a multitude of extension activities that can be adapted to students who have higher proficiency ratings.

The majority of the lessons in this two week unit are designed around a one - to - two day completion period; however, some lessons may be shortened or lengthened depending upon student and teacher interest. A variety of science experiments are also included in this weather unit, and can be implemented during the lesson.

THEME: Climate
TOPIC: Introduction to weather and weather symbols
OBJECTIVES:
Language

Listening/Speaking:	Following directions Participate in class discussion
Reading/Writing:	Reading a chart Creating a chart Write sentences using symbols
Structures:	Conditionals Tenses
Content:	Application of weather symbols Recognize weather symbols
Thinking Skills:	Relating weather words to real life Relating weather words to clothing
Key Vocabulary:	Weather words: rain, snow, ice, sunny, cloudy, partly cloudy, hot, cold, warm, stormy, windy, clear.
Materials:	Teacher-made dialogue, weekly chart Jigsaw puzzle

Motivation:
The teacher will begin the discussion of weather-related vocabulary by having the students look around the room as they conduct a survey to determine what clothing the students in the class are wearing. The teacher then will ask how the people in the class are dressed, and will explore the reasons why the people are dressed as they are.

Presentation:
On the overhead, write the headings: SEE, FEEL, HEAR. Begin a discussion of what kinds of weather the students can see (sunny, cloudy, partly cloudy), what kinds of weather the students can feel (hot, warm, cold), and what kinds of weather the students can hear (rain, sleet, hail, wind, snow, stormy). Categorize the responses in chart form, and develop a symbol for each vocabulary term. Have the students copy the information onto their paper in the chart form.

Practice:
In cooperative groups, have the students;

1. Create sentences using symbols to show the present weather conditions.
2. Create sentences using symbols to show the weather from the previous day.
3. Create sentences using symbols to predict how the weather will be the next day.

Students then will share their sentences with the class, allowing the other cooperative groups to guess at the meaning of the sentences. Have the students then rewrite the sentences using the proper vocabulary word.

Review:
In cooperative learning groups, have the students complete the jigsaw puzzle, matching the weather symbol with the correct vocabulary word.

Home Task: Students will create a chart in order to track the weather for the week.

Extensions:
1. Interview parents about the weather in the students' home country.
2. Make a list of clothing that is weather related.
3. Write about their favorite type of weather.
4. List activities people do in the fall, spring, winter, and summer.
5. Find out more about the climate in the country of their choice.
6. Write a paragraph about the weather using the symbols discussed in class.

Weather words and their symbols:

rain

snow

ice

sunny

cloudy

partly cloudy

hot

cold

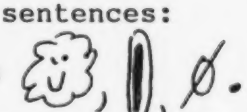
warm

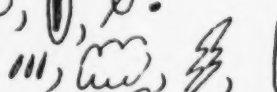
stormy

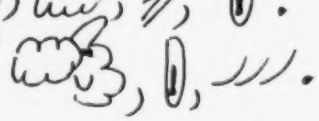
windy

clear

Examples of sentences:

Today it was  .

Yesterday it was  .

Tomorrow it will be  .

Jigsaw Puzzle

1. Cut along lines; laminate
2. Have students put together to reinforce vocabulary and weather symbols.

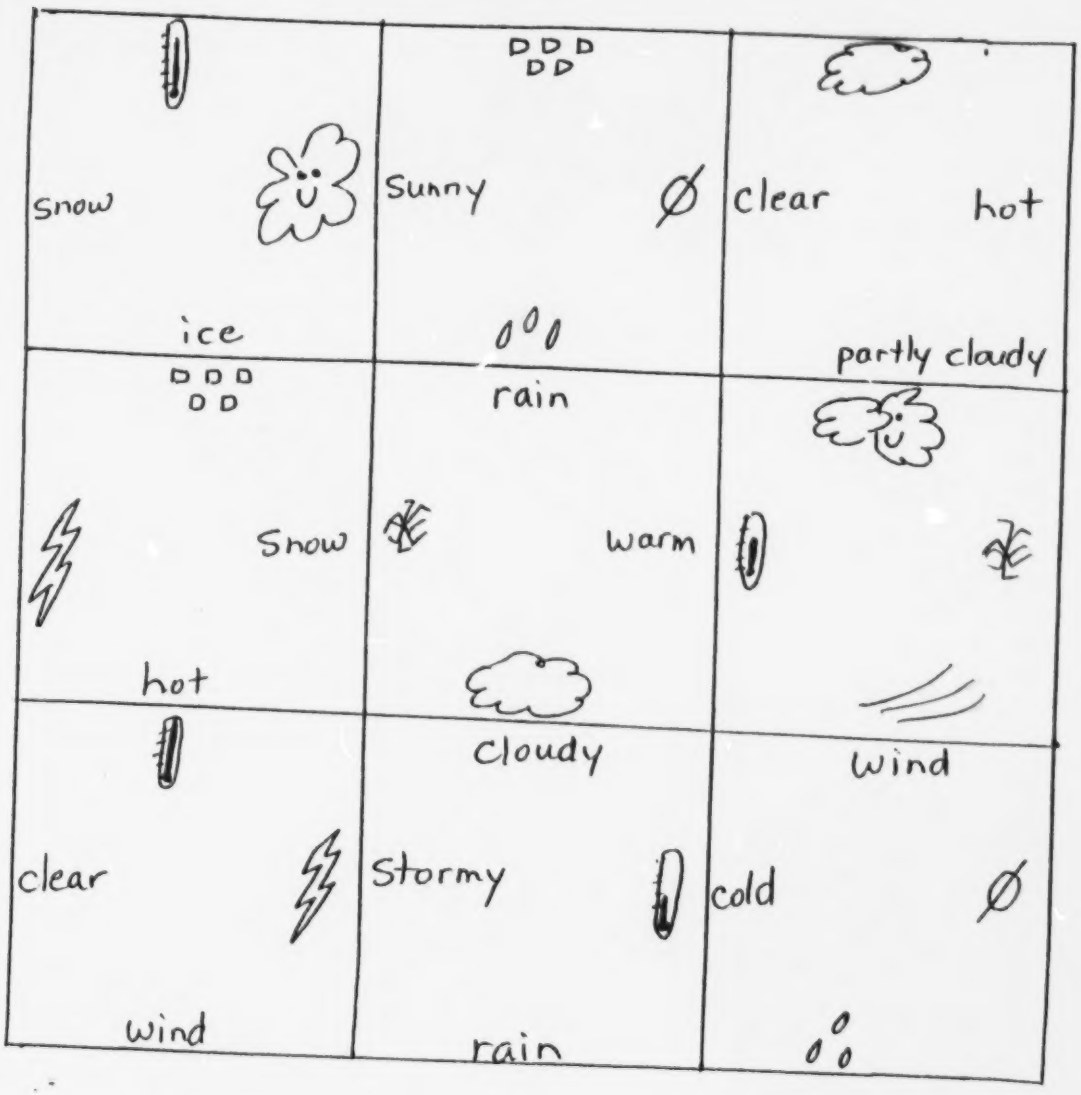
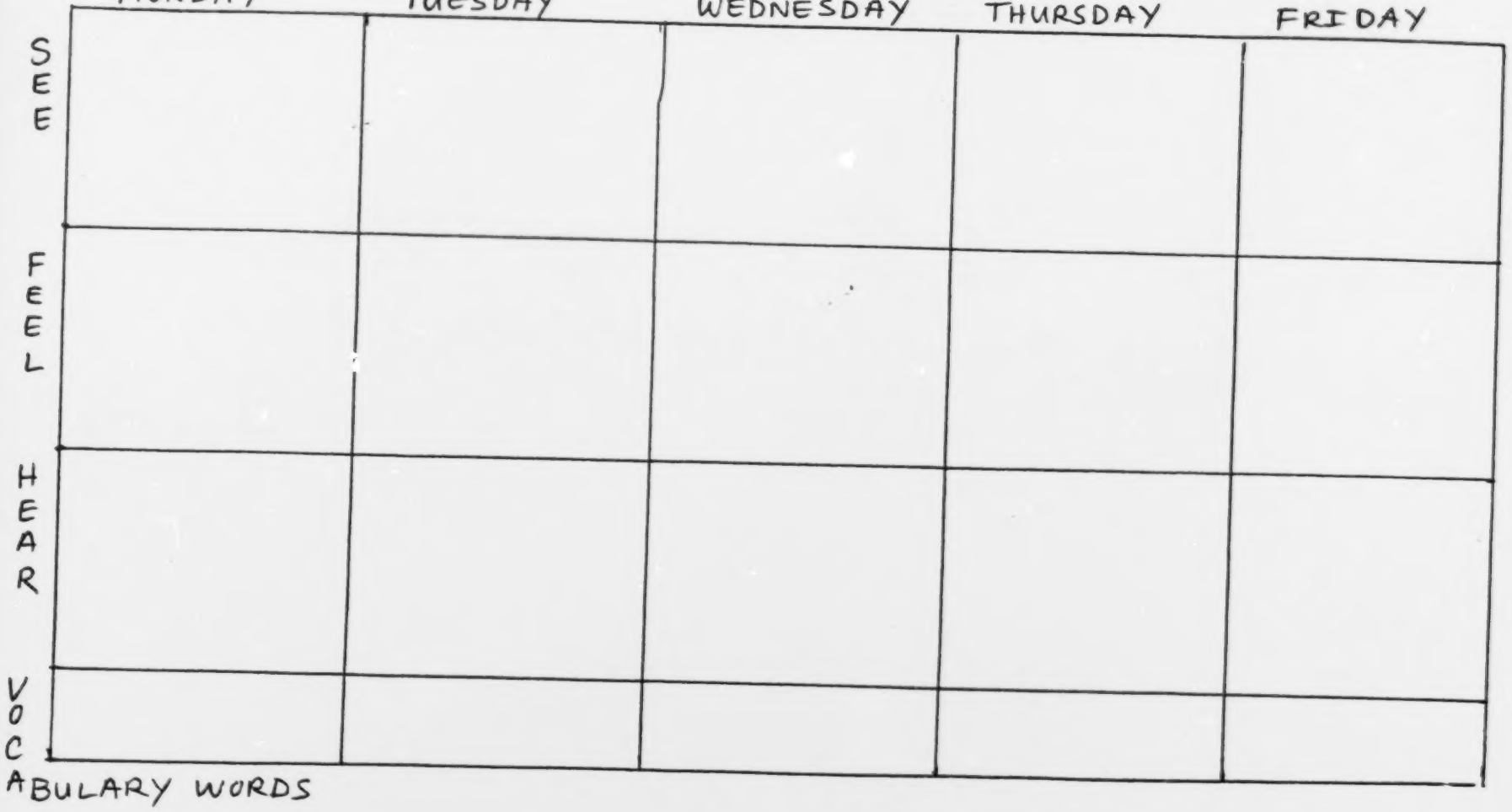


Chart the weather for the week.
1. Use weather symbols.
2. Write vocabulary word in last box.



THEME: Climate
TOPIC: Temperature
OBJECTIVES:

Language

Listening/Speaking:	Follow directions Participate in class discussions
Reading/Writing:	Fill in chart Make bar graph Read text and answer questions
Structure:	Comparatives Sequencing Tenses Answering questions
Content:	Read thermometer Measuring Recognizing why temperatures vary depending on location Identifying factors affecting temperature
Thinking Skills:	Graphing Ranking Analyzing Predicting Classifying Using a graphic organizer
Key Vocabulary:	Hot, warm, cold, chilly, shade, thermometer, degree, Celsius, Fahrenheit, mercury
Materials:	Posterboard-size sliding thermometer Thermometers Textbook: Integrated Science (1990) Carolina Academic Press Seventh grade level

DAY 1:

Motivation:
The teacher will demonstrate how to read a thermometer with the large thermometer (teacher made thermometer with the "mercury" sliding up and down). Students will practice reading the numerals and relate them to prior vocabulary: hot, warm, and cold. The teacher and students will brainstorm a list of where we could find hot, warm, and cold temperatures around the school.

Presentation:

After discussion, students will recieve a chart and map of the school. Students will, in small groups, predict the temperature at each thermometer that has been placed around the school (field in sun, field in shade, office, teacher's lounge in refrigerator, gym, classroom on floor, classroom above chalkboard, and classroom on overhead projector). They will write their predictions on their chart using both symbols (hot, warm, cold) and numbers indicating temperature. Then, students will visit each thermometer and record its temperature on their chart.

Practice:
Students will compare their predictions to the real temperatures that they found on the thermometers. Then, they will rank the temperatures from hottest to coldest and record them in a bar graph. Students will write a short narrative describing what was found at each site. For example, "First, I went to the gym and the temperature there was warm", etc.

Review:
The class will discuss the reasons for the range in temperatures. For example, why was it cooler on the floor of the classroom than it was above the chalkboard? Why was it cooler in the shade than it was in the sun?

Home Task:
Discover the hottest and coldest room in your house. Why is it the hottest or the coldest?

Extensions:
1. Convert temperatures form Fahrenheit to Celsius.
2. Study how hot air balloons work.
3. Write Haiku/Cinquain about temperature.
4. List things you can do in hot/cold weather.
5. Make of collage of things people wear/use in hot or cold weather.
6. Discuss how wind affects how you feel in hot/cold weather.

DAY 2:

Motivation:
The teacher will place a map of North Carolina on the overhead projector. The class will discuss the areas in which we would find hot, warm, and cold temperatures and the reasons for the differences. The teacher will record the ideas on the board.

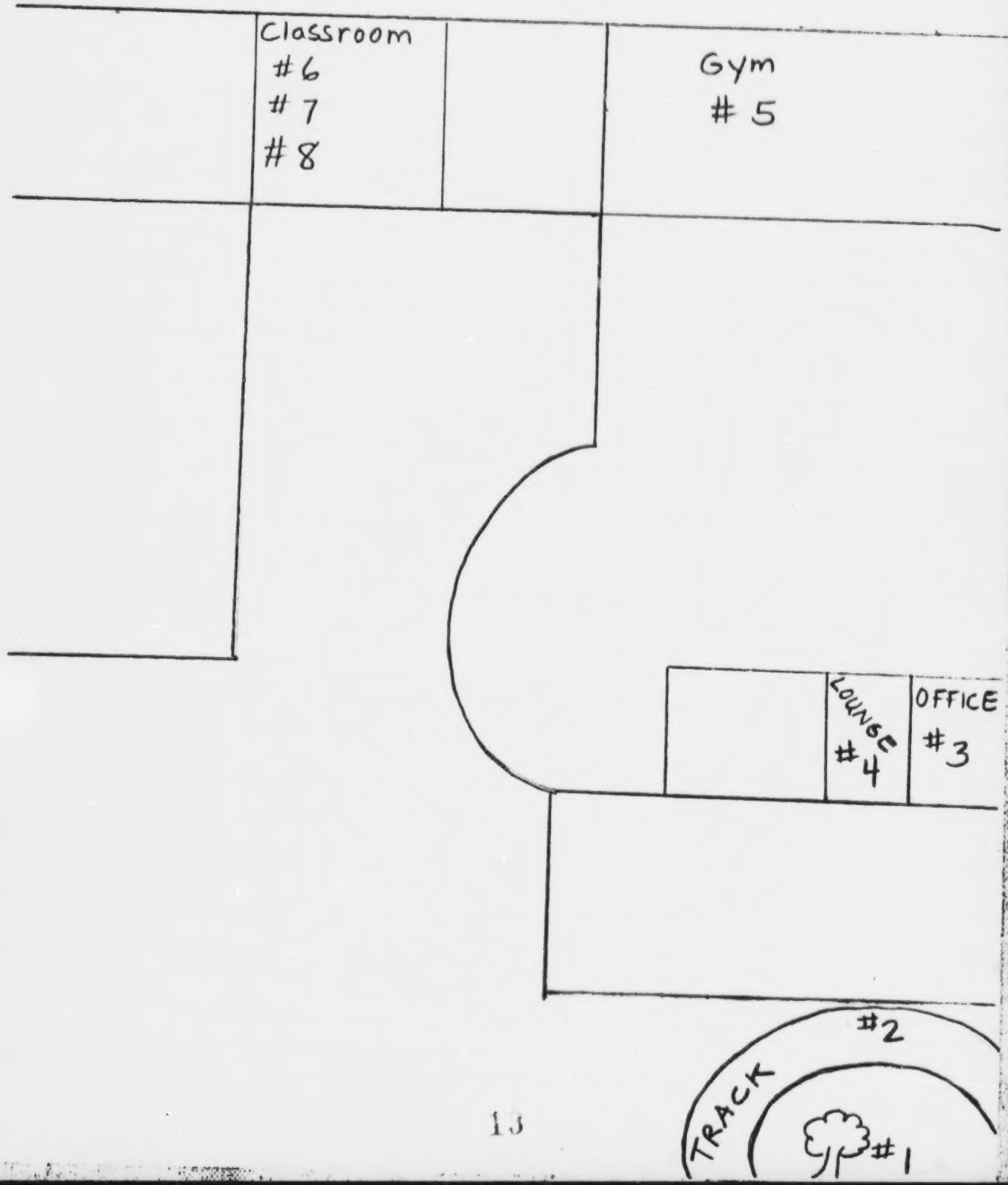
Presentation:
In cooperative learning groups, students will read aloud the textbook: pages 214-217. This section discusses the geographical factors that affect climate.

Practice:
Each cooperative learning group will be assigned a subtopic of the text to discuss: latitude, altitude, bodies of water, or mountains. They will create a list of facts and examples that describes their subtopic. The teacher will then give each student a blank graphic organizer and place a blank one on the overhead projector. Each group will give their list of facts for their subtopic and the teacher will record those facts in the graphic organizer on the overhead. The students will copy the facts and examples for each subtopic on their own graphic organizer.

Review:
The teacher will place the map of North Carolina back on the overhead projector. The class will discuss whether they were right or wrong in their earlier discussion of the differing temperatures in the state. Also, they will discuss the reasons for the differences in climate.

Hometask:
Students will draw a map of their own country (or state for larger countries) and show the geographical factors that affect the temperatures in the regions of the country.

Extensions:
1. What things would you take with you on a trip to the mountains in January? Why?
2. What things would you take with you on a trip to the beach in July? Why?
3. Find a major ocean current. Name and label it on a map.
4. Does longitude affect temperature? Why or why not?
5. Use dough art to create mountains that act as temperature boundaries.


Classroom
#6
#7
#8
Gym
#5
LOUNGE
#4
OFFICE
#3
#2
TRACK
#1

LOCATION	PREDICT SYMBOL	PREDICT DEGREE	ACTUAL DEGREE
#1. TRACK = SUN			
#2. TRACK - SHADE			
#3. OFFICE			
#4. REFRIGERATOR			
#5. GYM			
# 6. CLASSROOM - FLOOR			
#7. CLASSROOM - OVER CHALK-BOARD			
#8. CLASSROOM- OVERHEAD			

LATITUDE

ALTITUDE

PHYSICAL FACTORS AFFECTING TEMPERATURE

BODIES OF WATER

15

MOUNTAINS

15

THEME: Climate
TOPIC: Precipitation
OBJECTIVES:
Language

Listening/Speaking:	Following directions Oral description of various types of precipitation
Reading/Writing:	Write a cinquain Read Rainbow Crow
Structures:	Tenses Conditionals Question answering
Content:	Recognize different types of precipitation Recognize the seasons and temperatures that produce the different kinds of precipitation
Thinking Skills:	Classifying Relating Imagry Determining the difference between legend and reality
Key Vocabulary:	Weather words: rain, snow, sleet, hail, freezing rain, drizzle, mist, sprinkle, fog, rainbow
Literature:	Rainbow Crow (Nancy Van Laan. 1989. Alfred A. Knopf/ New York).
Materials:	Rain gauge - funnel, plastic soda bottle, masking tape, waterproof marker, ruler. Four Flannel Boards, index cards

DAY 1

Motivation:
The teacher will begin the discussion on precipitation by showing the class a variety of clothing and weather related pictures, such as an umbrella, boots, raincoat, snow suit. A discussion then takes place with teacher-generated questions, such as:
1. What do these pictures have in common?
2. When would you need to carry an umbrella?
3. When would you need to wear a snowsuit?

Presentation:
On the overhead, write the following words: LIQUID, SOLID, VAPOR. Have each of the four cooperative learning groups discuss a synonym for each word, such as water for liquid, ice for solid, and gas for vapor. Present each group with a set of index cards

on which the vocabulary words have been written. Students then will categorize the vocabulary words under the heading in which they think each word belongs.

Practice:
Each group will present their flannel board to the class and discuss where they think each vocabulary word belongs. A whole group consensus will be reached, and each student will copy the final agreement for study purposes. (Some words can belong to more than one category - this should lead to interesting discussions).
Have each group construct a rain gauge by following these directions:

1. Cut off the top of a plastic soda bottle where the width is the same as the base.
2. Tape thin strips of tape on the side of the bottle for the scale.
3. Put a handful of sand in the bottom of the bottle. Turn the top upside down and tape it inside the bottle.
4. Pour water into the bottle until it reaches the bottom strip of tape on the gauge. This is the rain gauge.

Once the rain gauge has been completed each group will decide where to place the gauge, and what conditions, weather-wise, will enable them to get a reading of the amount of rainfall. In other words, save the rain gauge for a "rainy day."

Review:
Use teacher-generated questions to review the vocabulary words:

1. What type of precipitation is most common in Charlotte? Why?
2. Which type of precipitation is the most dangerous? Why?
3. Which type of precipitation would you need an umbrella?
4. What might cause a rainbow?

Home Task:
Students will create a cinquain on some kind of precipitation; for example:

Snow
White, fluffy.
Floating, drifting, sledding.
It comes from above.
Crystal.

Extensions:

1. Create a chart to graph the rainfall from the rain gauge.
2. Research what causes a rainbow.
3. Explain the difference between freezing rain and sleet.
4. Research which kinds of clouds produce rain.
5. At what temperature is snow produced?
6. How is man-made snow made?

DAY 2

Motivation:
The teacher will begin a discussion about legends by asking the students questions about traditions that their family has passed on from generation to generation. Explain that a legend is very similar to a tradition or a myth in that it is a story that is important to a culture and is passed on from generation to generation. The story to be read in class is a legend from the Lenape Indian Tribe in Pennsylvania.

Presentation:
Give each student a xerox copy of the book, Rainbow Crow (Nancy Van Laan, 1989. Alfred A. Knopf/ New York). As this book is beautifully illustrated, the teacher will read the book to the class as the students read along using their copy.

Practice:
As a group, discuss what happened to the crow. In cooperative groups each student will contribute to answering the following questions:

1. How did the crow become black?
2. Is there such a thing as a Rainbow Crow?
3. Why didn't the Raccoon go visit the Great Sky Spirit?
4. What happened to the smaller animals?
5. How did the crow lose its voice?
6. Who was the Great Sky Spirit?
7. What finally melted the snow?
8. How many days did it take the crow to return from his visit to the Great Sky Spirit?
9. What was the normal weather like?
10. Why doesn't man hunt or eat the crow?
11. Why couldn't the Great Sky Spirit stop the snow?

After completing the questions each group will be required to share answers for a class discussion.

Home Task:
Each student will draw a cartoon strip of a legend they create, choosing one of the following:
How the parrot got its color.
How the rabbit got long ears.
How the raccoon got a mask across its face.
How the skunk got its stripe.

Extensions:

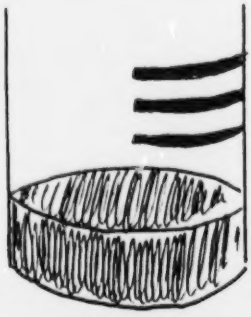
1. Write a legend from your country to share with the class.
2. Make a Rainbow Crow out of construction/tissue paper.
3. Describe what would happen to the city of Charlotte if 50 inches of snow fell in one day.
4. Research the Lenape Tribe.
5. Conduct the science experiment, Snow In A Box.

Rain Gauge

1.

Cut off the top of the bottle.

2.



Tape thin strips of tape at ¼ in. spaces.

3.

Put a handful of sand in the bottle. Tape the top half of the bottle into the bottom half.

4.

Pour water into the bottle to the first strip of tape.

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HOW THE GOT ITS

FIRST,	NEXT,	AND FINALLY,

Little-Known Lightning Facts

- Lightning strikes the earth about 100 times each second.
- A flash of lightning can sometimes be over 5 miles (8 km) long.
- Lightning temperatures can sometimes reach over 50,000° F (28,000° C)—that's over five times hotter than the sun's surface!
- More people are killed by lightning each year than by hurricanes, blizzards, or tornadoes.
- On the average, more than 100 people are electrocuted by lightning in the United States each year.
- By counting the seconds between a lightning flash and the thunder that follows, you can estimate the distance between you and the lightning: about every five seconds equals one mile.

Snow in a Box

Make a cloud in a box and watch it snow.

Objective:
Observe and describe the conditions that cause snow to form.

Ages:
Intermediate and Advanced

Materials:
- *dry ice (about 40 pounds [18 kg])*
- *thick gloves*
- *powerful flashlight or slide projector*
- *hammer*
- *towel*
- *newspaper*
- *two boxes, one a little smaller than the other. The larger box should be about 36" × 48" and the smaller box should be about 12" × 24".*
- *black construction paper*
- *thermometer*

Subject:
Science

In this activity you can make your own snow-forming cloud in a box and show your group what it takes to make snow. First explain that in order for snow to form there need to be:

- a cloud that is supercooled (The water droplets are below freezing.)
- particles of ice for water vapor to condense on
- cold air and ground temperatures so the snow doesn't melt as it falls

Then show your group that you can create these conditions in a special dry-ice box. Here's how to do it:

1. Line the inside of the smaller box with black construction paper.
2. Put the smaller box inside the larger box and fill the space between them with small chunks of dry ice. (Always handle dry ice with gloves. It is so cold that it can stick to your skin and cause frostbite.) Put newspaper over the top layer of dry ice to keep it from evaporating.
3. Cover the smaller box and allow the air inside it to drop to freezing temperatures. This will take about eight to ten minutes.
4. Now you're ready to make snow. Let a small group of children gather around the box to observe. (If too many kids gather around, it will be hard for everyone to see.) Warn them not to touch the dry ice.

5. Remove the cover and breathe into the box to fill it with water vapor. This will form a cloud that floats in the air of the smaller box. (The vapor from your breath is warm. As it cools, some of it condenses, forming a cloud.) Have the kids watch the cloud for a moment. It's a great way for them to see how clouds move. (They flow, almost like water.)
6. Hammer a small piece of dry ice into very tiny bits. (Put the ice in a towel to smash it.)
7. Turn off the lights and use a powerful flashlight or the light from a slide projector and shine it in at an angle through the cloud.
8. Drop a few of the tiny pieces of dry ice through the cloud. You will see snowflakes form in the cloud and fall on the black paper. The crystals "sparkle" because light reflects off their flat surfaces. (You won't get a lot of snow, but this demonstration will show kids how snowflakes form.) Discuss what happens. (See the background information on page 26.)

As a follow-up, you might want to have the kids make their own snowflakes out of soda straws (see page 59). Also see "Snowflake Bentley," *Ranger Rick*, December 1982, pp. 34–37 for more about snow and snowflake activities.

Weather Wizards

Play a team match-up game about different kinds of weather.

Objective:
Discuss accurate weather-related characteristics for each of the following: a sunny day, a tornado, a blizzard, and a hurricane.

Ages:
Intermediate to Adult

Materials:
- *Pictures of a sunny day, a hurricane, a tornado, and a blizzard*
- *Construction paper*
- *Index cards*
- *Glue*
- *Magazines*

Subject:
Science

What kind of weather is taking place when cloud droplets grow bigger and clump together, electrical charges build up in the clouds and on the ground, hot air expands quickly, and the air pressure drops? If you guessed a thunderstorm, you're right. In this activity your group can make their own deductions about the weather. It's a good way to challenge them to think while reviewing weather facts.

Before the activity, write each of these weather clues on a separate index card, but don't write down the type of weather it represents:

A SUNNY DAY

Clues:
- low humidity
- barometer probably steady or rising
- anti-cyclone
- small cumulus clouds here and there in the sky
- the sunset the night before was a deep pink color
- usually a high pressure system

BLIZZARD

Clues:
- can't see the clouds
- bitterly cold winds, usually from the north
- most severe ones occur in central Canada, parts of Russia, and the Great Plains of the United States
- plates, columns, and needles pile up
- symbol on a weather map: ✱
- visibility can approach zero
- drifting and blowing

HURRICANE

Clues:
- Andy, Betty, Cesar, Diana, Ed, Fran, and Gustav
- eye
- born in a hot, moist air mass over the ocean
- wind speeds of over 74 miles (117 km) per hour
- huge storm surges
- cyclones and typhoons
- would probably never happen in Ohio

TORNADO

Clues:
- usually lasts only a few minutes
- best to stay in basement or cellar
- most violent of all storms
- very sudden pressure drop
- majority occur in central United States from the Gulf Coast to the Northern Plains
- cumulonimbus clouds
- funnel clouds

(continued on page 33)

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THEME: Climate
TOPIC: Storms/ Bad Weather
OBJECTIVES:
Language

Listening/Speaking:	Follow directions Participate in class discussions Listen to weather warnings, interpret, and react.
Reading/Writing:	Write K-W-L Write directions for what to do in case of severe weather - Language Experience Approach
Structures:	Conditionals Negations Tenses Answering questions
Content:	Recognize characteristics of different types of storms - thunderstorm, blizzard, etc. Recognize weather warnings on TV and radio Describe the correct way to react to weather warnings
Thinking Skills:	Predicting Classifying Using a graphic organizer
Key Vocabulary:	Tornado, hurricane, cyclone, thunderstorm, thunder, lightning, hail, sleet, snow, freezing rain, blizzard, gale, wind chill, tornado drill Review seasons
Materials:	TV, VCR, tape player, audio and video tape of weather warnings Coathanger, paper, string, tape, scissors

<u>DAY 1</u>

Motivation:
On the overhead have written the following:
What I know about storms or bad weather.
What I want to learn about storms or bad weather.
Give the students 5 minutes to complete the K-W of the K-W-L.

Presentation:
Have the students share what they know about storms and bad weather and place the vocabulary terms on the overhead. The

list should be quite complete; if it is not, be sure to add all the weather vocabulary to the list. Select one type of bad weather and, in class discussion, begin to list the components of that type of weather (what causes it, what happens, what to expect, what is dangerous). For example, in a thunderstorm there can be heavy rain, lightning, thunder, wind and hail. Thunderstorms happen when a cold and warm front meet, and these storms usually happen in the spring and summer.

Practice:
Using the vocabulary from the overhead, students are to complete a graphic organizer, placing the vocabulary with the proper type of storm.

Review:
Students will write 5 sentences about the 5 different types of severe weather (thunderstorm, tornado, blizzard, hurricane, cyclone). In addition, each student will now complete the L part of the K-W-L, showing what they have learned about storms and bad weather.

Home Task:
1. List the kinds of severe weather in your country.
2. Write a weather warning about one kind of severe weather found in your country.
3. What 5 things would you take from your bedroom if you knew that your home was going to be destroyed by bad weather?

Extensions:
1. Bring in weather reports from the newspaper.
2. Watch weather reports on the news - look for "hot spots" and write a short paragraph about them.
3. Using a U.S. weather map, plot storms for a week.
4. Using maps of different continents, plot storms.
5. Make a weather vane.

Long-Term Projects:
1. What causes lightning, and a static electricity project.
2. What causes thunder?
3. Research the economic damages from a particular hurricane.
4. Read The Wizard of Oz.
5. Design a weather-proof house.

DAY 2

Motivation:
Have the students share their weather warning homework assignment. When all students have had an opportunity to read their warnings, have the school secretary make the following announcement to your class: "Due to the worsening weather conditions, our school has been placed on alert for a severe thunderstorm. Teachers, prepare to have your students take cover."

Presentation:
On the chalkboad write the following statement:

What to do when severe weather strikes.

In cooperative learning groups have the students compile a list of safety actions they can take during thunderstorms. This list should be completed according to location - what to do when at school, at home, and on the bus. After 5 minutes have each group share ideas and list the ideas on the chalkboard under the proper location.

Practice:
Give each cooperative lerning group the materials needed to make a mobile (coathanger, scissors, paper, tape, string) and have each group make a "what to do if" mobile. Each group will be responsible for a different type of severe weather - one will work on blizzards, another on tornados, a third on hurricanes, and the last on thunderstorms.

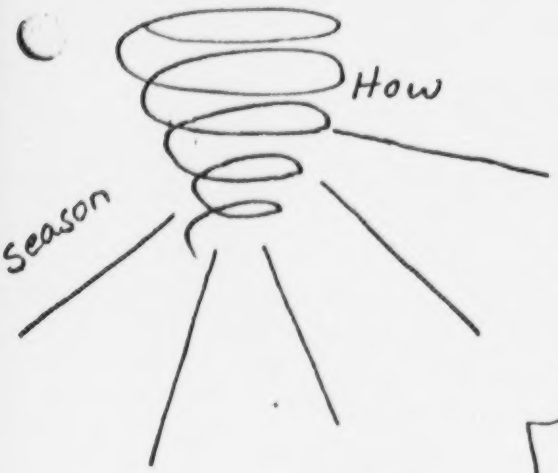
Review:
To demonstrate what has been learned, each student will complete a diagram outlining a type of storm, the key words associated with this storm, and safety precautions to take.

Home Task:
1. Discuss with the family what to do and where to go while at home should severe weather arise. Design a plan of action.
2. Discuss with the family and develop a fire escape route from the house. Draw the diagram.

Extensions:
1. Research the tornado drill plan for the school; make suggestions for improvement, if needed.
2. Create a list of things a family would need to have in the event a blizzard struck and no one could get out.
3. Conduct a survey to see what things teenagers would miss if the electricity was cut off for a week.
4. List the dangerous activities happening in the graphic "Lightning On The Loose."

Class Project:
In cooperative learning groups, have the students prepare a video demonstrating what to do for weather emergencies, such as the "duck and cover" technique during tornado drills.

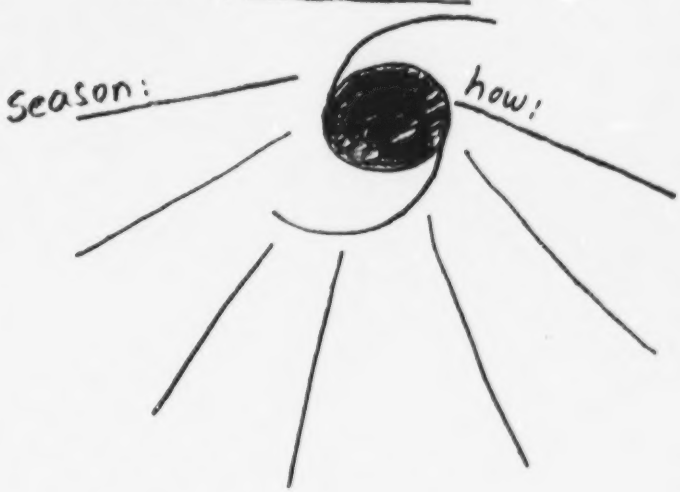
Name _____



Name _____

Name _____

Name _____



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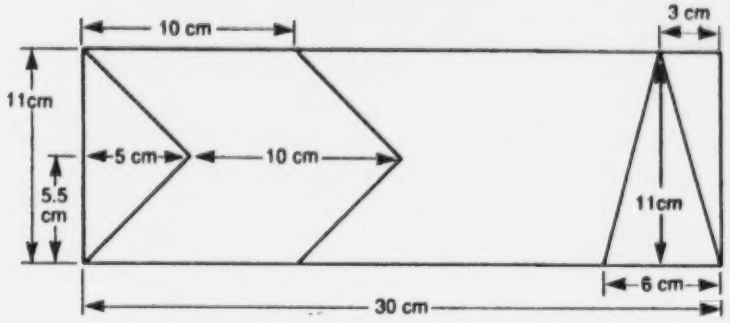
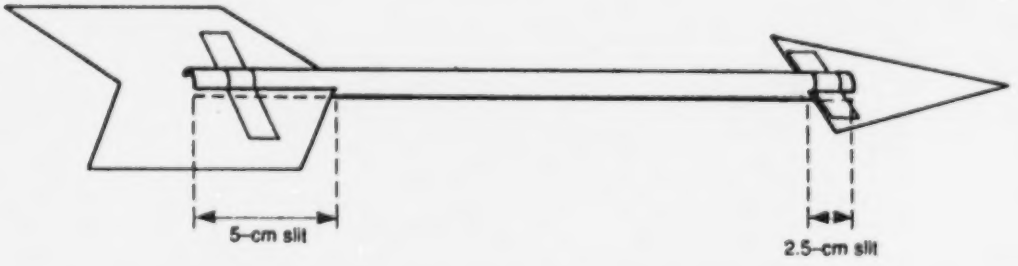
Worksheet 3

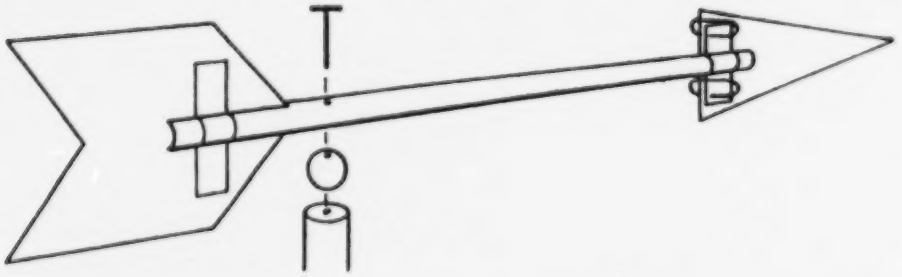


1. Use the ruler and a pencil to sketch the wind vane's head and tail on the cardboard, as shown above. Then cut out these shapes.

2. Slit the ends of the straw. Slide the head and the tail into the slits. Fasten them with tape.



3. Push the T-pin through the straw about 1 cm from the fin. Then slide the pointed end of the T-pin through the hole in the wooden bead and into the end of the dowel. Be sure the vane turns freely.



4. If necessary, attach one or more paper clips to the head of the vane so that the head and the tail balance.

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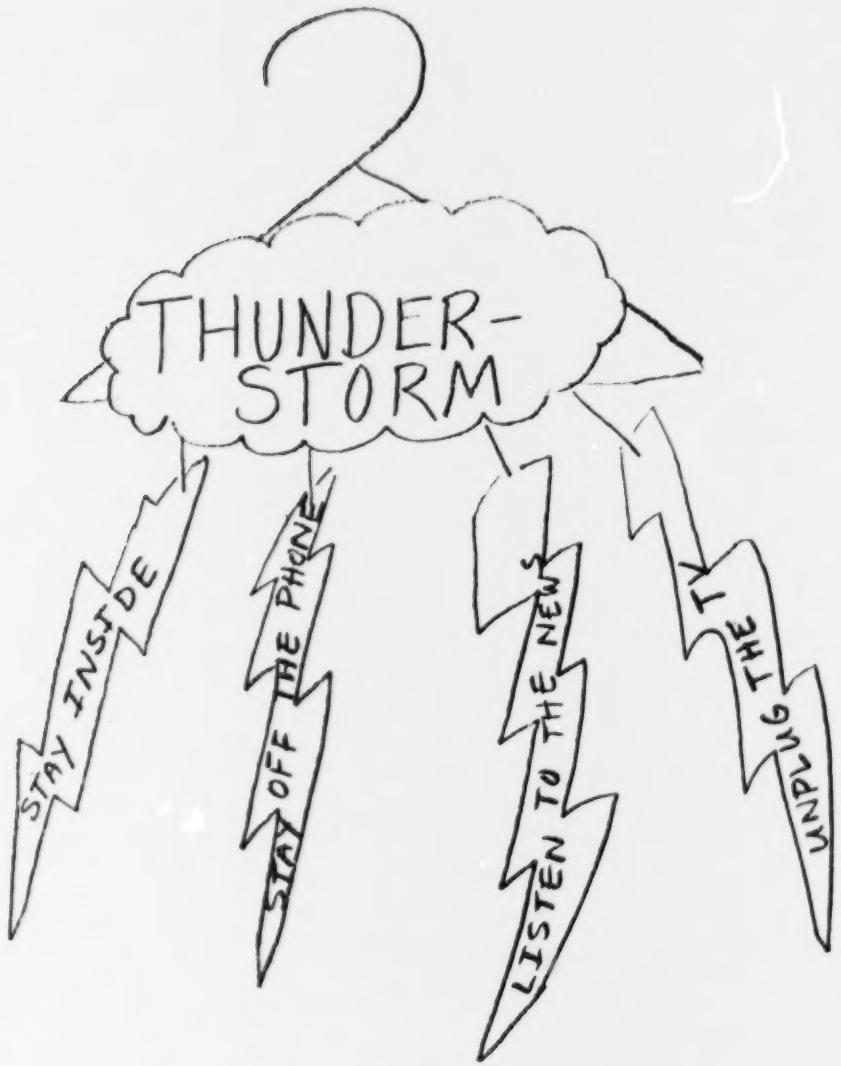

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1. Draw a picture of the storm. Label any important parts.
2. List the Key words associated with this storm.
3. List the precautions people should take to be safe.

1.

2.

3.

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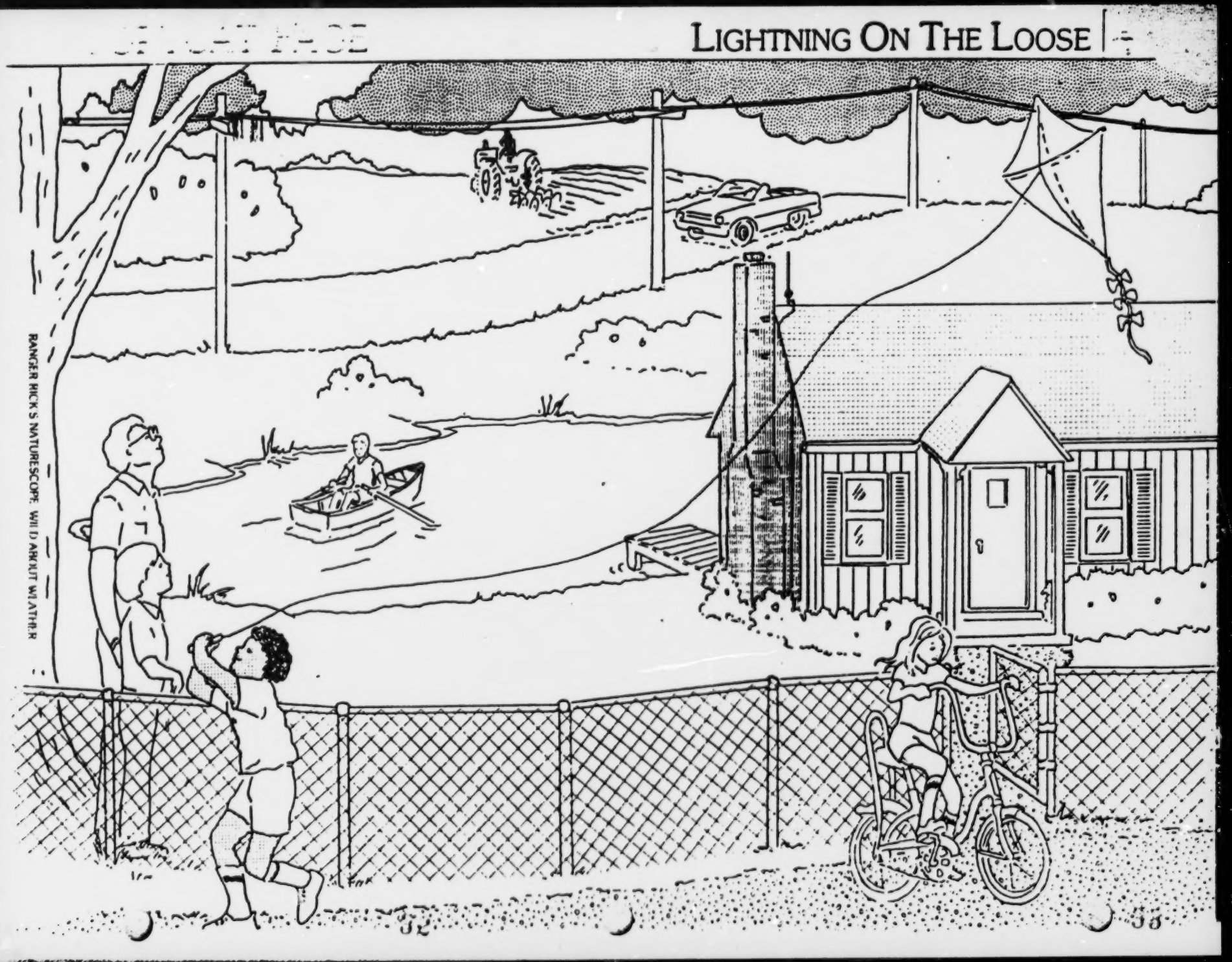
LIGHTNING ON THE LOOSE



RANGER RICK'S NATURESCOPE WILD ABOUT WEATHER

THEME: Climate
TOPIC: Survey
OBJECTIVES:

Language	
Listening/Speaking:	Following directions Asking questions
Reading/Writing:	Writing questions Recording answers
Structures:	Tenses Conditionals
Content:	Differentiate between fact and fiction
Thinking Skills:	Graphing data Analyzing data
Key Vocabulary:	Survey, opinion, fact, pie graph, bar graph, percentage, majority, minority

DAY 1

Motivation:
Give each student a teacher-generated survey asking their opinion on TV programs. Categories include topics such as comedy programs, sport programs, news programs, cartoon and other TV shows.

Presentation:
When the students have completed the survey ask for suggestions as to how to tabulate the answers given by the class. Suggestions may include tally marks, pie graphs, bar graphs, plotting, percentages, etc. Demonstrate each graph style on the overhead.

Practice:
In cooperative learning groups, have the students create a survey they can use to ask the opinion of other students, teachers and family members. Questions are weather related. Each cooperative learning group will be responsible for creating 10 survey questions on weather. The questions should be fairly short and easy to answer (yes/no and multiple choice). Sample questions may include:

1. Have you ever been in a tornado?
2. If caught outside during a thunderstorm, which of the following is the safest place to be?
   A. on a hill
   B. Under a tall tree
   C. In a low-lying area

In addition to the 10 weather questions, the survey must include space for age, grade and sex.

Review:
Allow the students to practice their survey on members of the class. Have the students then chart the results in either a pie graph, bar graph or other graph and share the results with the class.

Home Task:
Each student will survey 10 different people - 5 students and 5 adults.

Extensions:
1. Investigate scientific methods of showing data.

DAY 2

Motivation:
As the students enter the classroom, do a quick head count to determine the number of males and females. Write the number of each on the board. Have the students stand if they can answer "yes" to the following questions:
1. Are you wearing jeans today?
2. Are you wearing tennis shoes today?
3. Did you eat breakfast this morning?
4. Did you ride the bus to school this morning?
5. Did you do your homework last night?

As the students are responding to the questions, write the key word and the number on the board (jeans - 15).

Presentation:
Referring to the information on the board, comment on the numbers of students who rode the bus by saying, "the majority of you rode the bus this morning. A minority came to school another way. The majority of you ate breakfast this morning. A minority did not eat breakfast." Continue with each of the examples until the students understand that majority means more people than a minority.

Practice:
Referring to the surveys completed by each member of the cooperative learning groups, have each group compile results for each question asked. Results should include an answer to the question, the respondees' age, sex and grade. Choosing one graphing method, each group will graph the results to the 10 weather survey questions on poster board. When complete each group will share the results of their survey with the other cooperative groups.

Review:
Using the information from all 4 cooperative learning groups, create a chart showing the number of males and females who responded to the survey. Determine the majority and minority.

Home Task:
Using the information gained from the survey and charts, write one sentence for each of the questions asked indicating the majority and minority. For example: The majority of the students who listen to the weather reports are female.

Extensions:
1. Using an almanac, determine the number of sunny days during the previous year.
2. Using an almanac, determine the average temperature in Charlotte during the previous year.

THEME: Climate
TOPIC: Scavenger Hunt
OBJECTIVES:

Language	
Listening/Speaking:	Following directions Conferencing with partner
Reading/Writing:	Reading directions Interpreting clues
Structures:	Tenses Sequencing Asking question
Content;	Identifying answers to clues Locating objects
Thinking Skills:	Relating clues to reality Analyzing clues
Key Vocabulary:	Scavenger Hunt
Materials:	List of things to find in the hunt

Motivation:
As the students enter the classroom the teacher is frantically looking for an object, such as an eraser. Momentarily, the teacher has forgotten the name of the object, but can describe it. Using descriptive words and sentences, have the students assist in finding the lost eraser.

Presentation:
Once the lost object has been located, list on the overhead the key words and phrases that helped the students find the eraser. Key words might include board, wipe, clean, mistake. Explain to the student that they will be given a list of 30 places or things to find based on clues written in a sentence or statement. All of the objects have something to do with weather and can be found on the school grounds.

Practice:
Before beginning the Scavenger Hunt it is important to set in place a few guidelines such as: "don't pick flowers, reach under logs or wander away from the school grounds." Have the students assist in creating guidelines and copy on the board. Give each student a copy of the Scavenger Hunt clues. Explain that, with a partner, they are to find as many of the objects as they can in a 20 minute time period. As they find the object or place they are to write what, where and why on their check list. If they are confused about the meaning of a clue they may ask another person or the teacher.

Review:
When the 20 minute time period is over, all students are to meet back in the classroom to share their findings. List the answers on the board and discuss any curious or questionable replies.

Home Task:
1. Complete the survey at home or in the neighborhood.

Extensions:
1. With a partner or in cooperative learning groups, write a different Scavenger Hunt clue list.

Weather Scavenger Hunt

CLUES	LOCATION/OBJECT
1. Something bending toward the sun	
2. Something hiding from sunshine	
3. Something that may become a part of a cloud	
4. Something that tells you the wind is blowing	
5. Something left by the rain	
6. A bad place for a person to seek shelter during a lightning storm	
7. A place where ice may form	
8. A place where weather had damaged a building	
9. A good place for a person to seek shelter during a tornado	
10. Sign of an animal that likes rain	
11. A place to go where it's cool	
12. A place where rain has moved the soil	
13. A place that gets little sunshine	
14. Something that bends in the wind	
15. Something that won't bend in the wind	
16. Something that reflects lots of sunlight	
17. Something that absorbs lots of sunlight	
18. Something that will soak up rain	
19. Something that makes rain splatter	
20. Something that protects people from rain	
21. Something that uses sunlight or wind or water to work	
22. Something that smells better after a rain shower.	
23. A good windbreak	
24. Something shaped by wind or water	
25. A sign of lightning damage	
26. Something the color of the sky	
27. Something the color of snow	
28. Something that would make snow melt	
29. Animal tracks in the soil	
30. Something carried by the wind	

Weather References

Ardley, Neil (1992) The Science Book of Weather. Harcourt Brace Jovanovich, Publishers. New York. This book has many elementary science experiement to determine the components of weather.

Cosgrove, Brian (1991) Eyewitness Books - Weather. Alfred A. Knopf. New York. This book uses excellent illustraitions in defining weather and its' parts.

Ford, Adam (1981) Weather Watch. Lothrop, Lee and Shepard Books. New York. An elementary level book explain what happens and why.

Hill, Stanford and others. (1990) Integrated Science. Carolina Academic Press. Durham. This textbook is currently in used by 7th grade science students in the CMS system.

Ranger Rick's Nature Scope (1988) National Wildlife Federation. Washington, DC. This magazine is very creative in its explainations and experiments. Activities for students of all ages.

Simon, Seymour (1993) Weather. Morrow Junior Books. New York. This elementary weather book has beautiful photographs to accent the easily understood text.

VanCleave, Janice (1993) Geography for Every Kid. John Wiley and Sons, Inc. Primarily a geography idea book, the chapters on water and weather have good experiments.

Van Laan, Nancy (1989) Rainbow Crow. Alfred A. Knopf. New York. This delightful story is set in a snowstorm.

Webster, Vera (1982) Weather Experiments. Childrens Press. Chicago. This low level book has many activities and experiments that can be done in a classroom.

Weather books by Franklyn Branley (non-fiction)

These materials were added when this unit was taught during summer school

WEATHER VOCABULARY LIST

Draw a picture next to each word to help you remember the word.

1. Sunshine

2. Rain

3. Snow

4. Storm

5. Cloud

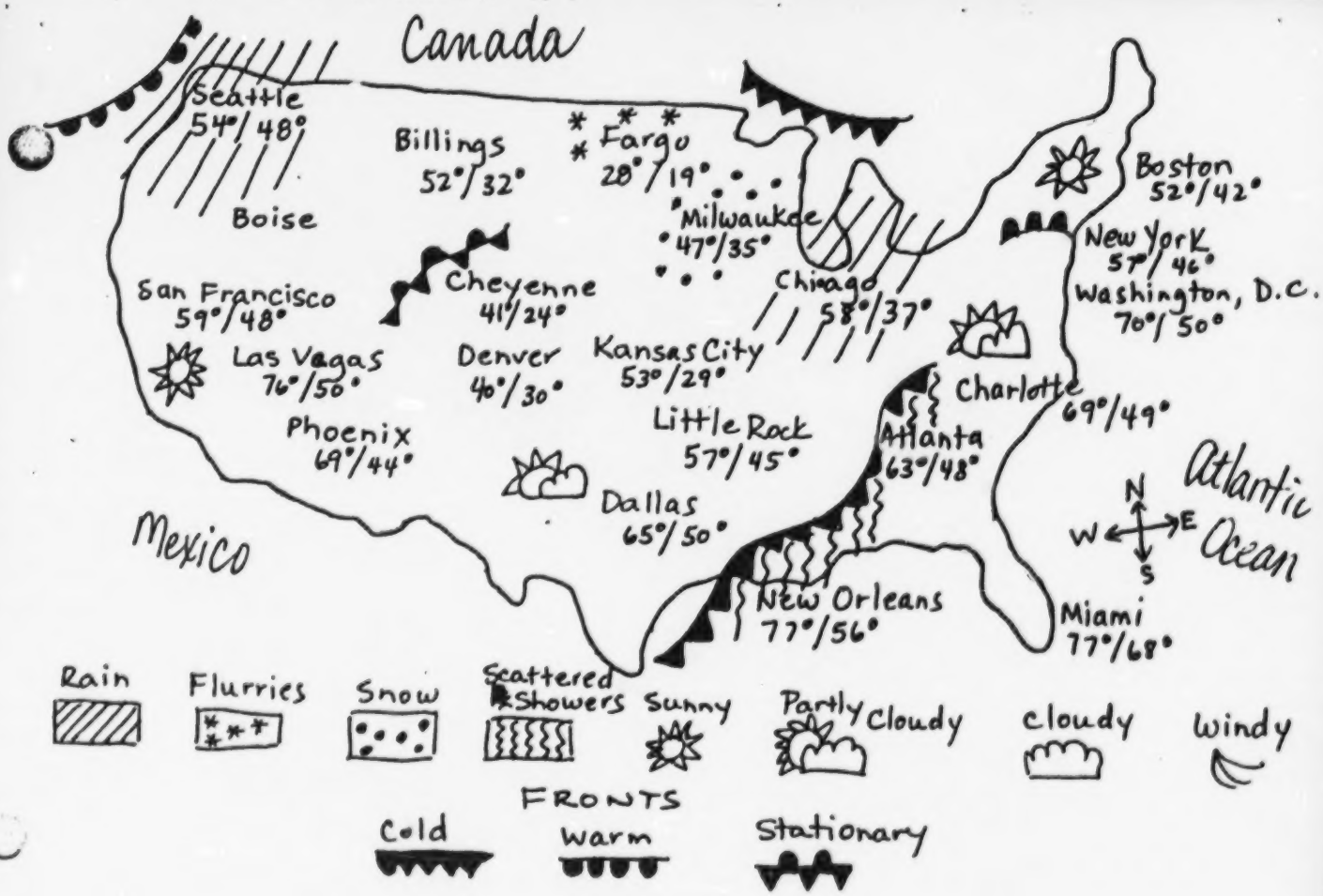
6. Hot

7. Warm

8. Cold

9. Chilly

10. Humid



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USING A WEATHER MAP

1. Near what cities are the two warm fronts located?
2. Draw the symbol used on the weather map to show a warm front.
3. Draw the symbol used to show rain.
4. What kind of weather is in New Orleans?
4. If you lived in Chicago, what kind of weather will you get in a day or two?
5. What kind of weather is moving with the cold front east of Little Rock and west of Atlanta?
6. Which city had the coldest temperature? What was the temperature?
7. Which two cities had the same high temperature? What was the temperature?
8. What kind of weather is Charlotte having?
9. What cities are having sunny weather?
10. What city is having snow flurries?
11. What city is the farthest north? What is the temperature?
12. What city is the farthest west? What is the temperature?
13. What city is southwest of Charlotte? What is the temperature?
14. What city is the farthest northwest? What is the weather like there?
15. What city is the farthest south? What is the temperature?

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Name _____

F O R C A S T O B Y E C A K N T C
R E X P P A R T L Y C L O U D Y E
E A S T R A I N I D I Z B C N N R
W L C T E G N I Z E E R F O I N U
O I L S C Y S S Z N Q E A N W U T
H W E E I S C U A A J T L T M S A
S F A W P A H M R C R N A I S A R
T O R N A D O M D I B I B N C K E
G V H Z T N O E H R S W I E U P P
L I A H I A L R V R W O G N J X M
M F L O O D S Q E U N O R T H D E
U R W O N S O U T H T F Y L U J T

Directions: find each word then write a sentence using each word.

1. forcast
2. Snow
3. flood
4. tornado
5. precipation
6. partly cloudy
7. rain
8. blizzard
9. hurricane
10. wind
11. sunny
12. ice
13. clear
14. Shower
15. hail
16. freezing
17. Continent
18. Asia
19. south
20. north
21. east
22. west
23. School
24. winter
25. Summer
26. July
27. temperatur

WEATHER TEST

I. MATCH THE VOCABULARY WORD WITH THE CORRECT ANSWER.

1. Flood	Hot, cold, cool, warm
2. Smog	Too much rain in a short period of time
3. Blizzard	Rain or snow that can be measured
4. Forcast	Pollution in the air
5. Precipitation	Make a guess about the weather

II. PUT THE WORDS UNDER THE RIGHT HEADING.

TEMPERATURE	PRECIPITATION	SKY	SEVERE WEATHER

WORD LIST:

rain, sleet, partly cloudy, clear, tornado, hot, shower, smog, snow, cold, hurricane, gale, sunny, rainbow, thunderstorm, cloudy, windy, cool, chilly, degree, drizzle, blizzard, mist, lightning, freezing

PART I WEATHER - Tell Me Why Video

1. Weather is made up of three things: _____, moisture and motion.
2. Draw a picture to show how the earth looks as it goes around the sun.

3. The five types of weather are:
   A. Tropical, which has warm and _____ weather.
   B. _____, which has hot summer, dry winter.
   C. Mid _____, which has humid weather and cool deserts.
   D. _____ Latitude weather, which has _____ winters and summers.
   E. High _____, where there can be snow on the mountains all year.

4. There are _____ weather stations in the U.S., and they send information to _____, the capitol of the U.S.

PART II. RAIN

1. Sun + Earth + Atmosphere =_____.

2. _____ air + cold air = rain.

3. The equator gets about _____ inches of rain.

4. The place that gets the most rain is in the state of _____. It gets about 471.68 inches of rain each year.

5. The place that gets the least amount of rain is in _____. It gets about .02 inches each _____.

6. The two types of humidity are _____ and relative.

7. The colors in a rainbow are r_____, o_____, y_____, g_____, b_____, indigo, and violet.

PART III STORMS

1. In a thunderstorm, you see the _____ first and hear the _____ later.

2. The light travels faster than _____ in a thunderstorm.

3. Monsoon is a Arabic word for _____.

4.Draw the shape of a cyclone.

5. A tornado comes from a very, very bad _____.

6. In a tornado the winds can go as fast as _____ miles per hour.

7. In a hurricane, the _____ of the storm is calm with no wind.

8. Hurricane season begins on _____ and ends on December 1.

PART IV. WINDS

1. The three kinds of winds are called d_____, t_____, and monsoon.

PART V. FOG

1. Fog is a _____ on the ground.

PART VI. SNOW

1. Snow is frozen _____.

2. A snow flake has _____ sides.

PART VII. WATER

1. Water is made up of two gasses, hydrogen and _____.

2. Water can be a liquid, like rain, a solid, like _____, or a _____, like water vapor.

3. When the temperature is 32 degrees water will become a s_____.

4. When the temperature is 212 degrees water will become a v_____.

PART VII. BODIES OF WATER

1. The three kinds of bodies of water are l_____, r_____, and o_____.

WEATHER TEST

I. Match the vocabulary word with the correct answer.

1. Smog_____
2. Rain_____
3. Lightning_____
4. Hot_____
5. Thunderstorm_____
6. Drizzle_____
7. Windy_____
8. Cool_____
9. Partly Cloudy_____
10. Degree_____
11. Clear_____
12. Tornado_____
13. Sunny_____
14. Snow_____
15. Blizzard_____

A. Temperature
B. Precipitation
C. Sky
D. Severe Weather

II. Put the months of the year in the correct order.

March April October December August June May January September February July November

III. Name the four seasons.

Weather

Put these weather words in the right season. Some words may be used more than once.

snow rain hot cold warm cool partly cloudy
gale rainbow sunny
tornado blizzard thunderstorm hail
shower hurricane flood wet dry
lightning storm coldfront warmfront

Winter Spring Summer Fall

WEATHER BINGO

1. You can see these in the sky, and sometimes they cause rain (cloud)
2. Something used to measure how hot or cold it is (thermometer)
3. A real bad storm that has an eye (hurricane)
4. This has six sides (snow flake)
5. A real bad storm with 400 mile per hour winds (tornado)
6. Electricity (lightning)
7. The amount of water in the air (humidity)
8. You can feel this, but can only see it when the trees move (wind)
9. A storm with rain, wind, lightning and sound (thunderstorm)
10. At 32 degrees water turns into ice, which is this (solid)
11. A very bad snow storm (blizzard)
12. A cloud on the ground (fog)
13. The sound you hear after you see lightning (thunder)
14. Another word for air (atmosphere)
15. Another word for atmosphere (air)
16. At 212 degrees water turns into this (gas)
17. The symbol for water (H20)
18. What gives us light outside (sun)
19. Another word for when it is raining - you might take one before you come to school (shower)
20. When there are no clouds in the sky it is (Clear)
21. How hot or cold it is (temperature)
22. The weather over a long period of time (climate)
23. A strong wind (gale)
23. When you see the sun and clouds (partly cloudy)
24. When it rains a lot in a short period of time (flood)
25. The season after winter (spring)
26. The season after summer (fall)
27. The season after spring (summer)
28. The season after fall (winter)
29. You go swimming when the temperature is this (hot)
30. Ice can form when the temperature is this (cold)